REMARKS

Claims 1-20 are pending in this application, with claims 1, 6, 11 and 16 being independent. Claim 1, 5, 6, 10, 11, 15, 16 and 20 have been amended. Favorable reconsideration and allowance are respectfully requested.

The Office Action rejected Claims 1-20 under 35 U.S.C. § 112, second paragraph, as indefinite. In particular, the Office Action contends that ambiguity is created by the use of the singular term "switch" in certain instances and the plural term "switches" in others.

In response, Applicants have amended claims 1, 5, 6, 10, 11, 15, 16 and 20 to make clear that the telecommunications system includes at least one switch, that each switch includes plural cards, that each card has plural ports and that the ports are divided into one or more switch equipment groups. Applicants have maintained the uses of the plural term "switches" in the compiling step of the independent claims ("compiling a list of switches, cards and ports"), since the use of the phraseology "at least one switch" in the preambles contemplates that there may be more than one switch in the system. Applicants believe that the claims are now clear and unambiguous, and respectfully request the Examiner to remove the Section 112 rejection.

The Office Action rejected claims 1, 2, 6, 7, 11, 12, 16 and 17 under 35 U.S.C. § 103 as obvious from U.S. Patent No. 5,864,535 to Basilico; and rejected claims 3-5, 8-10, 13-15 and 18-20 under Section 103 as obvious from Basilico in view of U.S. Patent No. 5,809,282 to Cooper. These rejections are respectfully traversed.

A conventional telecommunications system has multiple switches. Each switch has multiple cards and each card has multiple ports, with the ports being used to

provide the requested services to customers. Services are provided most smoothly when the port utilization is spread out among cards and switches as evenly as possible. For example, only a certain percentage of ports on a given card may be used at one time without overloading the capabilities of the switch. Proper port selection, therefore, is an important component of the overall operations of a telecommunications system.

Despite this truism, port selection in telecommunications systems has conventionally been performed in an ad hoc manner, without enabling technicians performing the tasks to take into account load balancing factors when providing new features or services. The present invention fills this void, and provides novel methods and systems for effecting inside plant (ISP) load balancing that takes into consideration a variety of factors unique to a telecommunications system.

More particularly, as recited in independent claim 1, the present invention relates to a method for effecting ISP load balancing in a telecommunication system. The system includes at least one switch, each switch has multiple cards and each card has multiple ports. In this method, a list of switches, cards and ports available for providing a desired service is compiled, and a port is selected on the basis of one or more of the following:

(a) an extent to which other ports on the card on which the port under consideration is located are in use;

(b) a loading of services on the card;

(c) a length of jumper wire necessary to connect the port under consideration to a frame in a telecommunications central office;

(d) a cost of the card on which the port under consideration is located, and

(e) selected percentage weighting factors for the respective priorities of (a), (b) and (c).

Independent claim 6 is directed to a computerized readable memory medium that controls an apparatus to perform a method along the lines of the method of claim. Independent claim 11 is directed to a load balancing apparatus, having means for performing the steps of claim 1. Independent claim 16 is directed to computer code that performs the steps at claim 1. All of those claims, like claim 1, recite making a port selection determination on the basis of the factors set forth above.

Basilico does not relate to ISP load balancing in a telecommunication system at all, but rather to dynamic load balancing of messages in a server-workstation network. Thus, the overall architecture in the Basilico network is inapposite to the environment in which the present invention operates. In essence, Basilico is concerned with communications between a server with multiple network interface cards (NICs) and a plurality of workstations, each having a single NIC. See Basilico Fig. 1. These components communicate through a local area network (LAN) switch, which has multiple input and output ports as shown in Fig. 3. But this LAN switch does not have plural cards within it, with each card having plural ports, as is the case with the present invention, and as is recited explicitly in each of the independent claims. And because its environment is so different, Basilico cannot possibility teach or suggest performing port selection on the basis of the factors set forth above, given that those factors are unique to telecommunication systems.

The Office Action contends that Basilico shows selecting a port on the basis of factors (a) and (c). Applicants respectfully disagree. The passage of Basilico cited as teaching these features reads as follows:

> The switch determines whether the particular switch destination port is currently busy, that is, processing a packet. If free, the first switch destination output port matching the packet header accepts the packet and provides a connection to the first server port. If the first switch destination port is busy, the second switch destination port matching the packet header accepts the packet and provides a connection to the associated server Network Interface Card.

Basilico at col. 3: 35-43.

This passage simply teaches attempting to route a message through a first port if it is not busy, and through a second port if the first port is busy. The only factor it teaches, therefore, is whether the port under consideration (i.e., the first switch destination output port) is itself in use. It has nothing whatsoever to do with claim factor (a), i.e. "an extent to which other ports on the card on which the port under consideration is located are in use" (emphasis added) Indeed, it could not, since Basilico does not even operate in an environment of cards having multiple ports.

Similarly, the passage of Basilico has nothing whatsoever to do with claim factor (c), i.e. "a length of jumper wire necessary to connect the port under consideration to a frame in a telecommunications central office." To the contrary, there is no mention in Basilico of jumpers, frames or central offices at all. Once again, because Basilico relates to a server-workstation network, and not to a telecommunications system, it could not possibly teach or suggest this factor.

Cooper is merely cited by the Office Action for teaching certain features of the dependent claims, i.e., soliciting from a user certain percentage weighting factors, and analyzing available cards one by one in decreasing order of costs. The Office Action does not even contend that Cooper teaches or suggests the features of the independent claims

discussed above, and plainly it does not. Cooper, therefore, cannot correct the deficiencies of Basilico.

Accordingly, Applicants respectfully submit that claim 1 is not obvious from Basilico or Cooper or their combination, and respectfully request the Examiner to remove the corresponding Section 103 rejections.

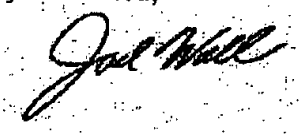
The remaining claims all depend from one of the independent claims discussed above, and each partakes in the novelty and non-obviousness of its respective base claim. In addition, each recites additional patentable features of the present invention, and individual reconsideration of each is respectfully requested.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and passage to issue of the present application.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 07-2347. If an extension of time under 37 C.F.R. § 1.136 not accounted for above is required, such an extension is requested and the fee should also be charged to our Deposit Account

Respectfully submitted,



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Date: May 5, 2004

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